

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P590880

Luminaire Tested: FSR-24-2-LD4-4LO-50-UNV-81-87-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590880  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-4LO-50-UNV-81-87-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

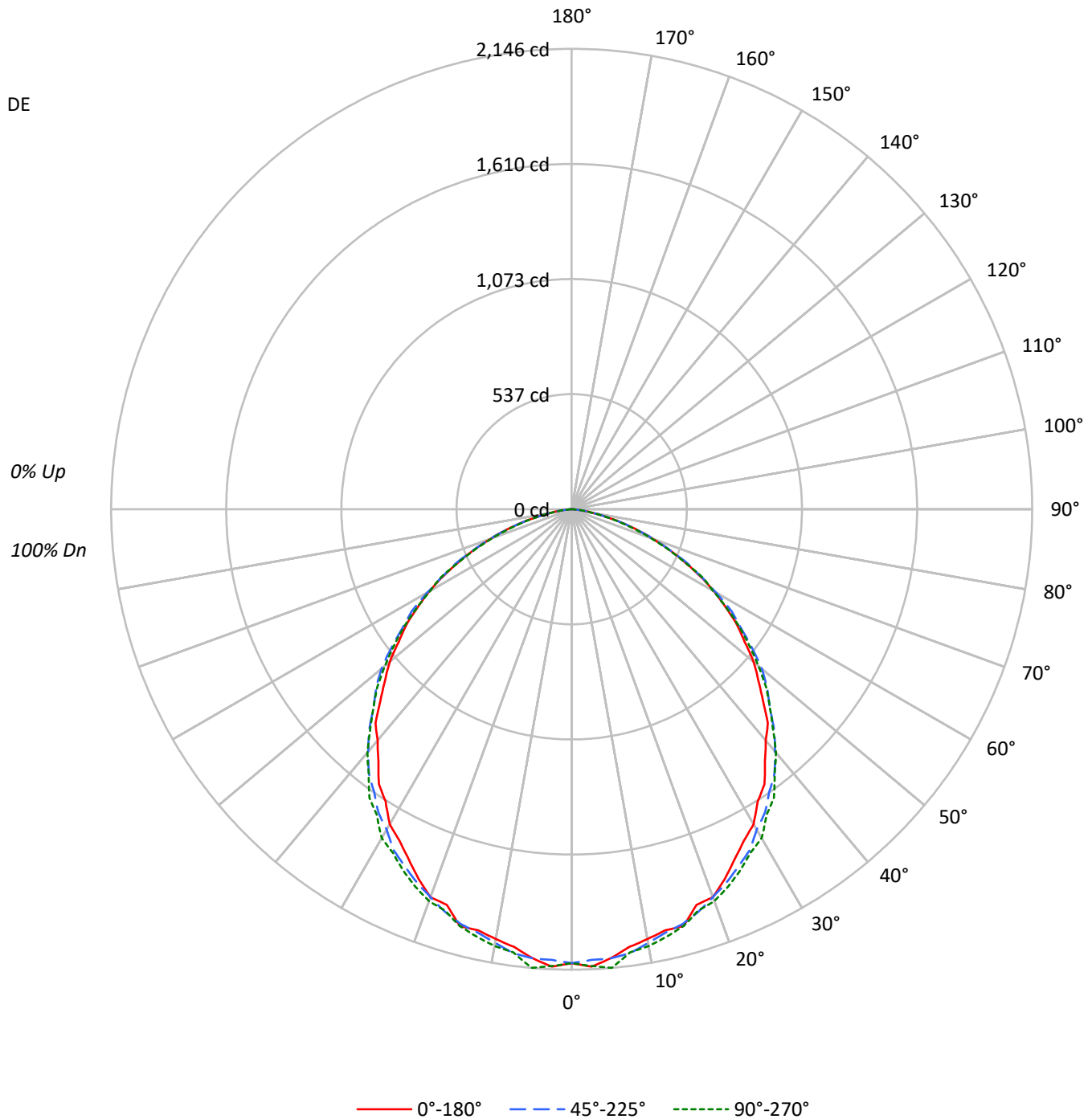
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5332.0 lumens  
Efficiency: N/A  
Efficacy: 113.9 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot



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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					20					
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86					86			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73					73			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62					62			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41					41			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26					26			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	5693	5693	5693
5°	5674	5676	5796
10°	5559	5608	5647
15°	5603	5573	5604
20°	5509	5509	5567
25°	5339	5456	5516
30°	5266	5358	5501
35°	5142	5276	5395
40°	4942	5180	5203
45°	4792	4963	4970
50°	4635	4844	4752
55°	4416	4502	4470
60°	4130	4170	4096
65°	3682	3776	3656
70°	3159	3170	3082
75°	2503	2496	2400
80°	1677	1630	1567
85°	911	902	843

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5091 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	199.0	3.7
10°-20°	564.0	10.6
20°-30°	845.0	15.8
30°-40°	1001.5	18.8
40°-50°	1003.3	18.8
50°-60°	851.7	16.0
60°-70°	574.2	10.8
70°-80°	252.3	4.7
80°-90°	41.0	0.8
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1608.0	30.2
0°-40°	2609.5	48.9
0°-60°	4464.5	83.7
0°-90°	5332.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5332.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2116	2116	2116	2116	2116	
5°	2101	2096	2101	2095	2146	198
15°	2011	1988	2000	2011	2012	560
25°	1798	1808	1838	1862	1858	831
35°	1565	1570	1606	1643	1642	972
45°	1259	1283	1304	1338	1306	974
55°	941	935	960	953	953	837
65°	578	571	593	570	574	575
75°	241	236	240	223	231	258
85°	30	29	29	28	27	43
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2115.6	2115.6	2115.6	2115.6	2115.6
2.5°	2133.9	2117.8	2102.8	2120.2	2130.9
5°	2100.6	2095.7	2101.4	2095.1	2145.7
7.5°	2057.4	2076.3	2087.2	2080.4	2083.4
10°	2034.5	2027.9	2052.2	2069.2	2066.7
12.5°	2009.9	2019.7	2021.1	2039.4	2041.0
15°	2011.3	1988.0	2000.3	2010.7	2011.5
17.5°	1933.1	1958.3	1966.7	1990.5	1961.0
20°	1923.6	1905.3	1923.6	1947.9	1944.1
22.5°	1864.8	1844.4	1883.7	1905.3	1903.9
25°	1798.2	1808.0	1837.5	1861.6	1857.7
27.5°	1739.7	1751.2	1793.3	1826.3	1805.0
30°	1694.7	1688.9	1724.4	1753.9	1770.3
32.5°	1614.1	1634.8	1676.4	1705.6	1690.0
35°	1565.2	1569.8	1606.2	1643.3	1642.2
37.5°	1479.7	1501.3	1552.4	1562.7	1553.2
40°	1406.8	1428.3	1474.5	1485.7	1481.1
42.5°	1352.9	1356.8	1396.4	1409.2	1388.7
45°	1259.3	1282.7	1304.1	1337.7	1306.0
47.5°	1179.5	1190.4	1236.3	1245.3	1228.7
50°	1107.1	1110.9	1157.1	1145.9	1135.0
52.5°	1016.1	1032.3	1058.2	1056.0	1043.2
55°	941.3	935.0	959.6	953.0	952.8
57.5°	851.4	862.4	882.6	872.2	855.5
60°	767.3	767.6	774.9	763.2	761.0
62.5°	673.6	676.9	678.5	664.0	687.5
65°	578.3	570.6	593.0	570.4	574.2
67.5°	490.6	494.4	492.2	478.0	483.5
70°	401.5	406.5	402.9	386.8	391.7
72.5°	320.1	314.1	318.0	297.7	307.0
75°	240.7	235.7	240.1	223.2	230.8
77.5°	163.9	167.7	165.0	156.0	161.2
80°	108.2	105.2	105.2	100.0	101.1
82.5°	63.1	60.1	59.3	57.6	60.1
85°	29.5	28.7	29.2	28.4	27.3
87.5°	10.7	10.9	10.9	10.4	9.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)